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Yersinia-induced arthritis and Reiter's syndrome

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Arthritis following yersinia infection has been well documented since the first descriptions from Scandinavia in 1969 of the relationship between the two conditions. The association of erythema nodosum in some cases and of the clinical manifestations of Reiter's syndrome (RS) in others is also well recorded.

Patients and methods

In 1975 a study was initiated in Vancouver to determine the prevalence of yersinia-induced arthritis. British Columbia has a population of $2\frac{1}{2}$ million. About 1 million reside in Greater Vancouver, in which are located 10 rheumatologists who co-operated in the study.

Sera from all patients whose acute or subacute arthritis was of unexplained origin were examined for agglutinins against the six most commonly encountered yersinial serotypes. Four cases of 'yersinia-related' arthritis were diagnosed by serological evidence from a group of 28 cases of 'acute undiagnosed arthritis'. None of the four cases had erythema nodosum and none had the clinical manifestations of RS. In addition, the testing of stored RS sera showed no yersinial agglutinins. The findings of this study have been reported.[116]

In the year after the above study a continued attempt was made to uncover further cases of yersinial arthritis. Serum samples from patients with arthritis in whom there was a suggestion of an antecedent intestinal infection, or of preceding abdominal symptoms, were forwarded to Dr. S. Toma, Director of the National Reference Service for Yersinia, at the Ontario Ministry of Health Laboratories, Toronto. The case selection was not precisely defined. A statistical evaluation is therefore not possible, but perhaps 20 such cases could be considered as 'postintestinal arthritis'. In fact, only one of these patients was diagnosed as yersinial arthritis, and he had the clinical manifestations of RS.

The patient was 28-year-old Chinese man who ate in a restaurant on 10 October 1977. The next day he complained of fever and diarrhoea. About five days later he noted dysuria and a urethral discharge but no ocular or mucocutaneous symptoms. He absolutely denied any recent sexual contacts. The day after the onset of dysuria he complained of pain and swelling of the right elbow and later the right knee, right ankle, and right first carpometacarpal joint. The arthritis gradually subsided over the succeeding three months. He had a *Y. enterocolitica* type 0:3 serum antibody level of 1:400. He was HLA–B27 positive.

Results and conclusions

The Vancouver data, summarised in the Table, permit the following conclusions:

(1) The incidence of yersinia-related arthritis in British Columbia may be about 10% of patients presenting with 'acute or subacute undiagnosed

Table *Summary of five cases of yersinial arthritis seen in Vancouver, British Columbia*

Case No.	*Sex*	*Age*	*HLA-B27*	*Gastrointestinal symptom*	*Yersinial serotype*	*Serology titre*	*Rheumatic manifestations*
1 Caucasian	M	19	+	Abdominal pain	8	320	Arthritis, both knees
2 Caucasian	F	20	0	None	9	1280	Arthritis, left knee right ankle
3 Chinese	M	31	+	Mild recurrent diarrhoea	6·30	160	Spinal pain, tendinitis, arthralgia
4 Chinese	M	25	+	Diarrhoea at onset	9	160	Spinal pain, tendinitis, right sternoclavicular and temperomandibular joints
5 Chinese	M	28	+	Diarrhoea at onset	3	400	Right ankle, knee, and elbow, dysuria

arthritis'. Five patients were found among about 50 studied.

(2) RS is an infrequent manifestation of yersinial arthritis, since it was diagnosable in only one out of five cases.

(3) Chinese people may be particularly susceptible to yersinial arthritis, because the finding of three Chinese patients out of five cases is unexpectedly high.

(4) Other causes of intestinal infection must precipitate acute arthritis, since several patients had had antecedent abdominal pain or diarrhoea, in whom a serological diagnosis of yersinial infection was not possible.